

CLAIM AMENDMENTS:

Claim 1 (Currently Amended): A self-cleaning method for a semiconductor exposure apparatus comprising a light source for emitting ultraviolet light for exposure, an optical system for guiding ultraviolet light emitted from the light source to an exposure mask on which an exposure pattern is formed, and a projection lens for projecting the exposure pattern to a subject to be processed, the method comprising ~~the steps of~~:

arranging, at a position where the exposure mask is to be disposed, a transmittable plate for diffusing ultraviolet light guided by the optical system and irradiating the projection lens with it it, wherein the transmittable plate is made of a quartz glass plate having a lens-shaped concave portion on one surface thereof and bracelet-shaped concave lenses concentrically arranged on the other surface thereof; and

irradiating an entire surface of the projection lens with the ultraviolet light emitted from the light source and diffused by the transmittable plate to optically clean a surface of the projection lens.

Claim 2 (Canceled).

Claim 3 (Canceled).

Claim 4 (Currently Amended): A self-cleaning method for a semiconductor exposure apparatus comprising a light source for emitting ultraviolet light for exposure, an optical system for guiding ultraviolet light emitted from the light source to an exposure mask on which an exposure pattern is formed, and a projection lens for projecting the exposure pattern to a subject to be processed, the method comprising the steps of:

arranging, at a position where the exposure mask is to be disposed, a transmittable plate for converging ultraviolet light guided by the optical system and irradiating the projection lens with it it, wherein the transmittable plate is made of a quartz glass plate having a lens-shaped convex portion on one surface thereof and bracelet-shaped convex lenses concentrically arranged on the other surface thereof; and

irradiating a middle of the projection lens with the ultraviolet light emitted from the light source and converged by the transmittable plate to optically clean an inside of the projection lens.

Claim 5 (Canceled).

Claim 6 (Canceled).

Claim 7 (Currently Amended): A self-cleaning transmittable plate in a semiconductor exposure apparatus comprising with a self-cleaning function comprising:

a light source for emitting ultraviolet light for exposure, exposure;
an exposure mask on which an exposure pattern is formed;
an optical system for guiding the ultraviolet light emitted from the light source to an the exposure mask mask; on which an exposure pattern is formed, and

a projection lens for projecting the exposure pattern to a subject to be processed, processed; and

the a self-cleaning transmittable plate being arranged at a position where the exposure mask is to be disposed to clean the projection lens with the ultraviolet light,

wherein the self-cleaning transmittable plate diffusing or converging diffuses or converts ultraviolet light guided by the optical system to irradiate the projection lens with the ultraviolet light, light, and

wherein the self-cleaning transmittable plate is made of a quartz glass plate having a lens-shaped concave portion on one surface thereof and bracelet-shaped concave lenses concentrically arranged on the other surface thereof.

Claim 8 (Canceled).

Claim 9 (Canceled).

Claim 10 (Currently Amended): A semiconductor exposure apparatus with a self-cleaning function, comprising:

a light-source for emitting ultraviolet light for exposure;
an exposure mask on which an exposure pattern is formed;
an optical system for guiding the ultraviolet light emitted from the light source to the exposure mask;
a projection lens for projecting the exposure pattern to a subject to be processed; and
a self-cleaning transmittable plate arranged at a position where the exposure mask is to be disposed to clean the projection lens with the ultraviolet light,
wherein the self-cleaning transmittable plate diffuses or converts the ultraviolet light guided by the optical system to irradiate the projection lens with the ultraviolet light, and
wherein The the self-cleaning transmittable plate according to claim 7,
which is made of a quartz glass plate having a lens-shaped convex portion on one surface thereof and bracelet-shaped convex lenses concentrically arranged on the other surface thereof.

Claim 11 (New): A self-cleaning method according to claim 1, wherein the ultraviolet light is an ArF excimer light having a wavelength of 193 nm.

Claim 12 (New): A self-cleaning method according to claim 1, wherein the ultraviolet light is an F2 light having a wavelength of 157 nm.

Claim 13 (New): A self-cleaning method according to claim 4, wherein the ultraviolet light is an ArF excimer light having a wavelength of 193 nm.

Claim 14 (New): A self-cleaning method according to claim 4, wherein the ultraviolet light is an F2 light having a wavelength of 157 nm.

Claim 15 (New): A semiconductor exposure apparatus according to claim 7, wherein the ultraviolet light is an ArF excimer light having a wavelength of 193 nm.

Claim 16 (New): A semiconductor exposure apparatus according to claim 7, wherein the ultraviolet light is an F2 light having a wavelength of 157 nm.

Claim 17 (New): A semiconductor exposure apparatus according to claim 10, wherein the ultraviolet light is an ArF excimer light having a wavelength of 193 nm.

Claim 18 (New): A semiconductor exposure apparatus according to claim 10, wherein the ultraviolet light is an F2 light having a wavelength of 157 nm.

Claim 19 (New): A self-cleaning method according to claim 1, wherein the self-cleaning transmittable plate includes a Fresnel lens made of a heat-resistant transparent resin.

Claim 20 (New): A self-cleaning method according to claim 4, wherein the self-cleaning transmittable plate includes a Fresnel lens made of a heat-resistant transparent resin.

Claim 21 (New): A semiconductor exposure apparatus according to claim 7, wherein the self-cleaning transmittable plate includes a Fresnel lens made of a heat-resistant transparent resin.

Claim 22 (New): A semiconductor exposure apparatus according to claim 10, wherein the self-cleaning transmittable plate includes a Fresnel lens made of a heat-resistant transparent resin.